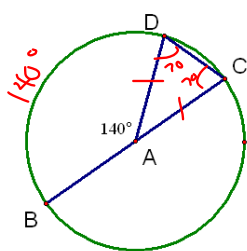
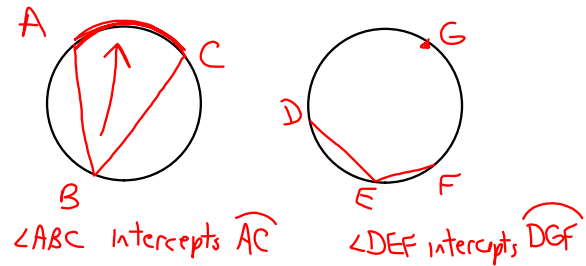


10-4 Inscribed Angles

Inscribed angle--angle whose vertex is on the circle and whose sides contain chords of the circle



Name the inscribed angle in the picture.

$\angle DCA$

What arc does it intercept?

\widehat{DA}

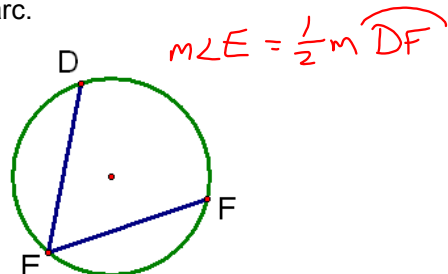
What is the measure of the intercepted arc?

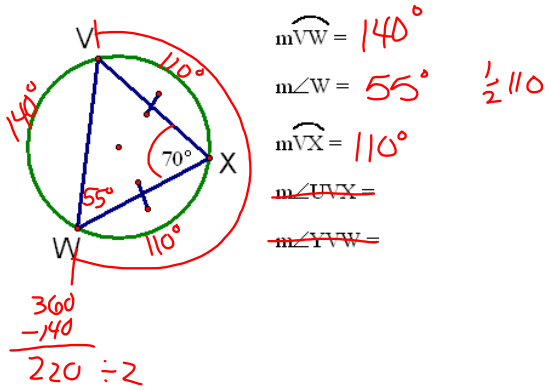
140°

What is the measure of the inscribed angle?

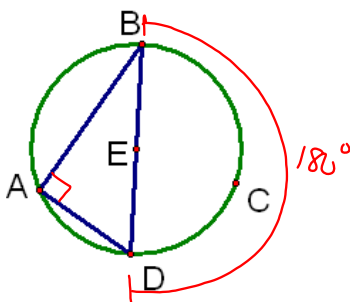
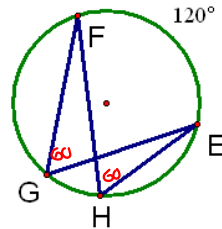
70°

Theorem 10-5--The measure of an inscribed angle is $= \frac{1}{2}$ the measure of the intercepted arc.

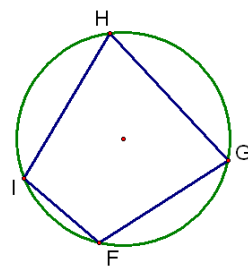




Theorem 10.6--If 2 inscribed angle intercept the same arc, then the angles are congruent.



Theorem 10-7--An angle inscribed in a semicircle is a right angle.



$$m\angle I = \frac{1}{2} m\widehat{HGF}$$

$$m\angle G = \frac{1}{2} m\widehat{HIF}$$

$$m\angle I + m\angle G = \frac{1}{2} m\widehat{HGF} + \frac{1}{2} m\widehat{HIF}$$

$$m\angle I + m\angle G = \frac{1}{2} (m\widehat{HGF} + m\widehat{HIF})$$

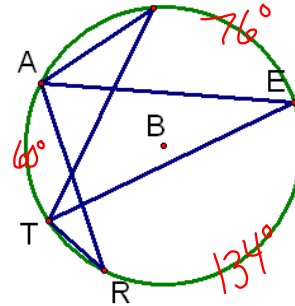
$$m\angle I + m\angle G = \frac{1}{2} (360)$$

$$180$$

Theorem 10-8--If a quadrilateral is inscribed in a circle, then its opposite angles are supplementary

$$m\angle H + m\angle F = 180$$

Example 1: L

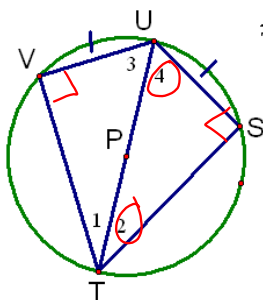


$$\begin{aligned} m\widehat{AT} &= 60^\circ \\ m\widehat{TE} &= 76^\circ \\ m\widehat{ER} &= 134^\circ \end{aligned}$$

Find

$$\begin{aligned} m\angle L &= 30^\circ \quad \frac{1}{2}60 \\ m\angle E &= 30^\circ \quad \frac{1}{2}76 \\ m\angle R &= 30^\circ \quad \frac{1}{2}76 \\ m\angle LAE &= 38^\circ \quad \frac{1}{2}76 \\ m\angle EAR &= 67^\circ \quad \frac{1}{2}134 \end{aligned}$$

Example 2:



\overline{TU} is the diameter

$$m\angle 2 = x + 9$$

$$m\angle 4 = 2x + 6$$

Find

$$m\angle 1 =$$

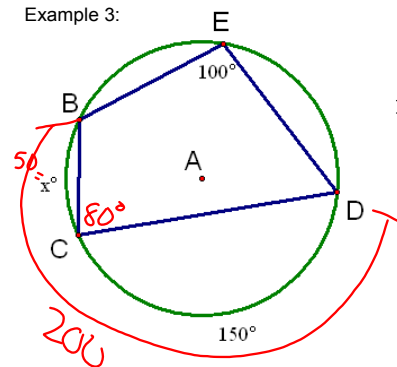
$$m\angle 2 =$$

$$m\angle 3 =$$

$$m\angle 4 =$$

$$x + 9 + 2x + 6 = 90$$

Example 3:



Find x.

HW

p549

8,10, 13-17

Draw Pictures!